

SECTION 02856
COMMUTER RAIL TRACK CONSTRUCTION

PART 1 - GENERAL

0.1 DESCRIPTION OF WORK

- A. Work Included: This Section specifies manufacturing inspecting, receiving, inventorying and stockpiling 39 foot lengths of standard 132 lb. RE rail.
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
 - 1. Section 02300 - EARTHWORK.
 - 2. Section 02850 - RAPID TRANSIT/LIGHT RAIL TRACK CONSTRUCTION.

0.2 SUBMITTALS

- A. Submit identity and qualifications of certified independent testing laboratory, which will perform rail inspection and testing at the mill during manufacturing.
- B. Prior to testing, submit rail inspection and testing procedures.
- C. Submit the following AREA forms for new 132 pound RE rail prior to rail shipment:
 - 1. 401-A Report of Chemical and Physical Examination of Rails - 1961
 - 2. 401-B Certificate of Inspection - 1961
 - 3. 401-C Report of shipment - 1961
 - 4. 401-D Record of Control - Cooled Rails - 1961

0.3 QUALITY ASSURANCE

- A. General
 - 1. Perform rail inspection and testing and at no additional cost to the Authority.
 - 2. Rail inspection and testing shall be performed by the approved certified independent testing laboratory or laboratories. The Engineer may audit operations at rail mill to ensure that inspections and tests are being performed in accordance with approved procedures and in compliance with these Specifications.

B. Rail Production Inspection and Testing

1. During rail production test and inspect each rail as specified herein to ensure compliance of rail to requirements of these Specifications.
2. Perform rail tests and inspections required to complete AREA Forms 401A and 401D. Perform rail tests and inspections in accordance with the 1992 AREA Manual for Railway Engineering, Chapter 4.
3. Perform Brinell Hardness Test on rail in accordance with the 1992 AREA Manual for Railway Engineering, Chapter 4, Part 2.
4. To be accepted rails shall satisfy test and inspection requirements of the 1992 AREA Manual for Railway Engineering, Chapter 4.

0.4 DELIVERY, STORAGE AND HANDLING

A. Rail: Handle rails in accordance with 1992 AREA Manual for Railway Engineering, Chapter 5 and these specifications:

1. During unloading and handling, rail shall be lifted using a minimum of a two point hitch to avoid causing a horizontal set in the rail.
2. Rails to be stockpiled by type and length with heads up, separating full length rails from short rails and standard rail from heat-treated rail.
3. First layer of rail in stockpile shall be on a firm timber foundation to prevent contact with ground and to protect rails from damage.
4. Rails shall be separated in tiers at a minimum of three points per 39 ft. rail. Stock used as separators between tiers of rail shall be oak or other hardwoods that will sustain weight of rails without crushing.
5. Rails may be stacked in tiers that are equal to the length of rails and each tier is 90 degrees to the tier under it. Use of separators in this type of stockpile is not necessary.

PART 2 - PRODUCTS

0.1 MATERIALS TO BE FURNISHED BY THE AUTHORITY

- A. None.**

0.2 MATERIALS TO BE FURNISHED BY THE CONTRACTOR

- A. Provide new 132 pound RE rail in standard grade with minimum Brinell Hardness of 285 BHN in accordance with the attached MBTA Commuter Rail Standard Specification No. 9236 - RAIL - STANDARD RUNNING.**
1. 1992 AREA Manual for Railway Engineering, Chapter 4, Part 2, pages 4-2-4.5 thru 4-2-4.10, Supplementary Requirements 5-2, and Appendix 1 shall also apply.

2. Short rails, 30 foot to 38 foot in length, will be accepted up to nine percent (9%) of the total rail required.
- B. End holes on all rails furnished shall be left blank to allow rail to be welded in the future.
- C. MBTA Commuter Rail Standard Material Specifications "Rail Standard Running" referred to are attached and made a part of these specifications.

PART 3 - EXECUTION

0.1 INSTALLATION

- A. None.

PART 4 - MEASUREMENT AND PAYMENT

0.1 MEASUREMENT

- A. Furnishing, inspecting, receiving, unloading, inventorying and delivering of rail strings to the project site will be measured and paid on a linear foot basis for each foot of rail delivered and accepted.

0.2 PAYMENT ITEMS

ITEM NO.	DESCRIPTION	UNIT
0290.222	FURNISH 132 RE SECTION RAIL	LF

END OF SECTION

RAIL STANDARD RUNNING

LENGTH

Standard running rail shall be supplied in 39 foot; 78 foot; or 80 foot lengths as specified in the order.

Short rails, in lengths as follows, shall be accepted up to the percent of the total order as specified in the order. If no percentage is specified then no short rails will be accepted.

<u>Rail Length Ordered</u>	<u>Acceptable Short Lengths</u>
39 foot	30 to 38 feet
78 foot	60 to 76 feet
80 foot	60 to 78 feet

MATERIAL

Standard running rail shall be new, control cooled steel rails of the weight specified in the order.

Chemical composition of standard rail shall conform to AREA Chapter 4, Part 2, Section 3.

Hardness of standard rail shall conform to AREA Chapter 4, Part 2, Section 4.

MANUFACTURE

Standard running rail workmanship shall be in accordance with AREA Chapter 4, Part 2.

INSPECTION

Rail shall be ultrasonically inspected along its full length for rail flaws.

The manufacturer or supplier of new standard running rail shall be responsible for all tests and inspections necessary to ensure that rail is in conformance with these specifications.

The following AREA forms from Chapter 4, Part 3 shall be completely and correctly filled in and delivered to the Authority prior to receipt of the rail.

- No. 401 - A Report of Chemical and Physical Inspection of Rails - 1961.
- No. 401 - B Certificate of Inspection - 1961.
- No. 401 - C Report of Shipment - 1961.
- No. 401 - D Record of Control Cooled Rails - 1961.

In addition to the above, all rails are subject to inspection by the Authority or approved designee, at delivery, for conformance with this specification. The

inspection at delivery shall include, but not be limited to, visual inspection and measurements to verify that all rail meets the requirement of this specification.

The manufacturer may have a representative present during this inspection.

Standard running rail is at the risk of the manufacturer or supplier until accepted by the Authority.

The Authority reserves the right to inspect the rail during manufacture or prior to shipment.

SHIPMENT

Rail shall be shipped in open railroad flat cars or gondolas.

Rail shall be loaded head-up with the rail bases touching.

First tier shall be set on blocking with three (3) blocks per 39 foot rail and five (5) blocks per 78 or 80 foot rail. Each subsequent tier shall be blocked in the same manner. Blocking used shall be of sufficient strength to support rail without crushing.

Rails shall be properly banded and secured to the car to prevent movement.

Short rails, when accepted in the order, shall be loaded separately - do not mix full lengths and shorts in the same car.

Rail rejected because of non-compliance with this specification will be returned at supplier's expense.

END OF RAIL STANDARD RUNNING

NOTES TO THE DESIGNER

A. Any request to modify or waive the specification requirements listed below must be approved in writing by the MBTA's Director of Design:

1. None